
Triethylene Glycol Diacetate

CAS #111-21-7

Swiss CD-1 mice, at 0.0, 0.75, 1.50, 3.00%, drinking water

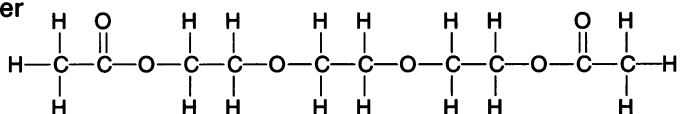
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NTIS: PB86161999/AS



Triethylene glycol diacetate (TGDA) was tested in the RACB protocol using Swiss CD-1 mice, as part of a larger effort to evaluate a series of glycol ethers and their structural congeners and metabolites (Bossert et al., *Fundam Appl Toxicol* 18:602-608 [1992]). Data gathered on body weights, clinical signs, and food and water consumption during the Task 1 dose-range-finding study were used to select concentrations for the continuous breeding phase (Task 2) of 0.0, 0.75, 1.5, and 3% weight per volume in drinking water. These concentrations produced calculated consumption estimates of approximately 1.31, 2.62, and 5.25 g/kg/day.

Continuous exposure of adult F₀ mice to these concentrations of TGD had no effect on the number of litters per pair, or

the number or weight of live pups per litter. The proportion of pups born alive was not affected by these concentrations of TGDA.

Since no effects were observed in Task 2, Task 3, which determines the effected sex, was not conducted. The last litter from Task 2 was nursed until weaning and then given water containing TGDA at the same concentration as their parents. Only the control and 3% TGDA groups were assessed in a second generation. Although viability was not adversely affected, pups nursed by dams receiving 3% TGDA weighed between 15 and 25% less than their controls at postnatal day 14 and 21. These differences in body weight had disappeared by the time of Task 4 mating at approximately postnatal day 74.

In the second generation mating trial, there were no treatment-related effects on

mating or fertility indices, or on the number of F₂ pups, their viability, or weight adjusted for litter size.

After the F₂ litters were delivered and evaluated, the F₁ adults were killed and necropsied. There were no TGDA-related differences in body weight for either sex. In males and females, relative kidney weight was increased by approximately 6 to 8%. No other treatment-related effects were found. Epididymal sperm concentration, motility, and morphology were unaffected by 3% TGDA consumption.

These data show that triethylene glycol diacetate had no detectable reproductive toxicity in Swiss CD-1 mice at exposure levels that altered kidney weights and neonatal development.

Summary: NTP Reproductive Assessment by Continuous Breeding Study.

NTIS#: PB86161999/AS

Chemical: Triethylene Glycol Diacetate

CAS#: 111-21-7

Mode of exposure: Drinking water

Species/strain: Swiss CD-1 mice

F ₀ generation	Dose concentration →	0.75%	1.5%	3.0%
General toxicity		Male, female	Male, female	Male, female
Body weight		—, —	—, —	—, —
Kidney weight ^a		•	•	•
Liver weight ^a		•	•	•
Mortality		•	•	•
Feed consumption		•	•	•
Water consumption		•	•	—, —
Clinical signs		—, —	—, —	—, —

Reproductive toxicity			
\bar{x} litters/pair	—	—	—
# live pups/litter; pup wt./litter	—, —	—, —	—, —
Cumulative days to litter	—	—	—
Absolute testis, epididymis weight ^a	•	•	•
Sex accessory gland weight ^a (prostate, seminal vesicle)	•	•	•
Epidid. sperm parameters (#, motility, morphology)	•	•	•
Estrous cycle length	•	•	•

Determination of affected sex (crossover)	Male	Female	Both
Dose level	•	•	•

F ₁ generation	Dose concentration →	•	•	•
General toxicity		Male, female	Male, female	Male, female
Pup growth to weaning		•	•	↓, ↓
Mortality		•	•	—, —
Adult body weight		•	•	—, —
Kidney weight ^a		•	•	↑, ↑
Liver weight ^a		•	•	—, —
Feed consumption		•	•	•
Water consumption		•	•	—, —
Clinical signs		•	•	—, —

Reproductive toxicity			
Fertility index	•	•	—
# live pups/litter; pup wt./litter	•	•	—, —
Absolute testis, epididymis weight ^a	•	•	—, —
Sex accessory gland weight ^a (prostate, seminal vesicle)	•	•	—, —
Epidid. sperm parameters (#, motility, morphology)	•	•	—, —, —
Estrous cycle length	•	•	•

Summary information	
Affected sex?	Unclear
Study confounders:	None
F ₁ more sensitive than F ₀ ?	No
Postnatal toxicity:	Yes

Legend: —, no change; •, no observation; ↑ or ↓, statistically significant change (p<0.05); —, —, no change in males or females. ^aAdjusted for body weight.